

4-20 mA loop powered sensors with temperature output

PC425 series

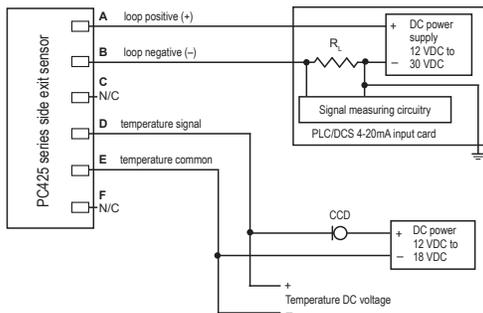
Table 1: PC425xxx-yy-Dz model selection guide

xxx (4-20 mA output type)	yy (4-20 mA full scale)	z (dynamic output) ^A
AR = acceleration, RMS AP = acceleration, equiv. peak ^B ATP = acceleration, true peak ^C	05 = 5 g (49 m/sec ²) 10 = 10 g (98 m/sec ²) 20 = 20 g (196 m/sec ²)	DA = dynamic acceleration, 100 mV/g (10.2 mV/m/s ²)
VR = velocity, RMS VP = velocity, equiv. peak ^B	05 = 0.5 ips (12.8 mm/sec) 10 = 1.0 ips (25.4 mm/sec) 20 = 2.0 ips (50.8 mm/sec) 30 = 3.0 ips (76.2 mm/sec) 50 = 5.0 ips (127 mm/sec)	DV = dynamic velocity, 100 mV/ips (3.94 mV/mm/s)

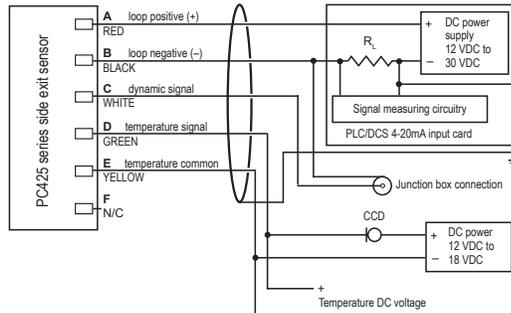


^A Dynamic output is an option on all models. If dynamic output option is not desired, do not add -DA or -DV to the model number.
^B Equivalent peak output is developed based on the true RMS value of vibration. For a pure sine wave, the equivalent peak output is 1.414 times the RMS value.
^C True peak output is based on the actual measured peak value using the time waveform and is not based on the RMS calculation.

PC425xxx-yy wiring



PC425xxx-yy-Dz wiring



Connections

Function	Cable		Connector pin
	J9T4 ³ / J9T4A ³	J95	
loop positive (+)	white	red	A
loop negative (-)	black	black	B
dynamic signal	n/c	white	C
temp signal	green	green	D
temp common	red	yellow	E
not used	n/c	n/c	F
ground			shell

Certifications



Key features

- Choice of peak equivalent, true RMS or true peak output
- Temperature signal output
- Optional dynamic signal output
- Easily integrated into existing process control systems
- Manufactured in an approved ISO 9001 facility

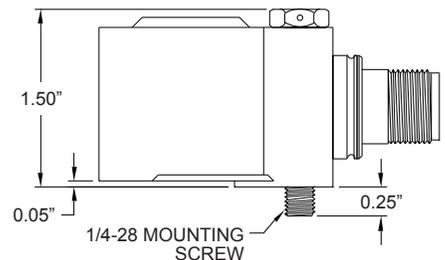
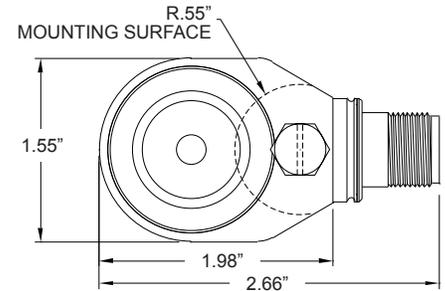
Note: Due to continuous process improvement, specifications are subject to change without notice. This document is cleared for public release.

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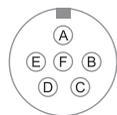
PC425 series

SPECIFICATIONS

Output, 4-20 mA:		
Full scale, 20 mA, ±5%	see Table 1 on page 1	
Frequency response:	±10%	10 Hz - 1.0 kHz
	±3 dB	4.0 Hz - 2.0 kHz
Repeatability	±2%	
Transverse sensitivity, max	5%	
Output, temperature:		
Temperature output sensitivity, ±5°K	10 mV/°K	
Temperature measurement range	223° to 358°K (-50° to +85°C)	
Output, dynamic (-Dz models only):		
	PC425-DA	PC425-DV
Sensitivity, ±10%	100 mV/g	100 mV/ips
Full scale	20 g, peak	1.5 ips at 1 kHz
Frequency response, ±3 dB	2.5 Hz - 10 kHz	2.5 Hz - 2.5 kHz
Amplitude nonlinearity, max	1%	
Resonant frequency, mounted, nom.	21 kHz	
Transverse sensitivity, max	5%	
Power requirements, 2-wire loop power:		
Voltage, between pins A and B	12 - 30 VDC	
Loop resistance ¹ at 24 VDC, max	700 Ω	
Turn on time, 4-20 mA loop	30 seconds	
Dynamic output, bias output voltage	+3.3 VDC, re: connector pin B	
Dynamic output noise, equiv. g:	PC425-DA	PC425-DV
2.5 Hz - 10 kHz	2 mg	0.002 ips
Grounding	case isolated, internally shielded	
Power requirements, temp. sensor²:		
Voltage source	12 - 18 VDC	
Current	0.4 - 5 mA	
Temperature range	-40° to +85°C	
Vibration limit	250 g peak	
Shock limit	2,500 g peak	
Sealing	hermetic	
Sensing element design	PZT ceramic / shear	
Weight	320 grams (excluding cable)	
Case material	316L stainless steel	
Mounting	1/4-28 captive bolt	
Output connector	6 pin, MIL-C-5015 style	
Mating connector	R19SLI	
Recommended cabling	J9T44 / J9T4A / J95	
Accessories supplied: 1/4-28 captive bolt; calibration data (level 2)		



6 pin connector, top view



Notes: ¹ Maximum loop resistance (R_L) can be calculated by:

$$R_L = \frac{V_{DC\ power} - 10\ V}{20\ mA}$$

DC supply voltage	R_L (max resistance) ³	R_L (minimum wattage capability) ⁴
12 VDC	100 Ω	1/8 watt
20 VDC	500 Ω	1/4 watt
24 VDC	700 Ω	1/2 watt
26 VDC	800 Ω	1/2 watt
30 VDC	1,000 Ω	1/2 watt

² The temperature sensor must have a current flow to operate. This current can be provided through constant-current diodes.

³ Lower resistance is allowed, greater than 10 Ω recommended.

⁴ Minimum R_L wattage determined by: $(0.0004 \times R_L)$.

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